

Appl. No. 09/674,648
Amdt. dated October 31, 2006
Reply to Office action of September 13, 2007

REMARKS/ARGUMENTS

Claims 1 and 3 - 5 are pending.

Claim 1 has been amended to incorporate the limitations of canceled, but original, claims 1, 2, 8, and 13.

The rejection of claims 1 and 3 – 5 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement is respectfully traversed. The Examiner objected to the phrase “swaging, or stretching”, but as pointed out in the remarks accompanying the prior amendment, “swaging” and “stretching” are directly supported in the specification; see paragraph [0019] (referring to the clean replacement specification filed with the March 5, 2004 amendment), specifically lines 5 – 7 of paragraph [0019], which states in relevant part:

“In accordance with a further preferred development of the invention in a method step, which precedes the above mentioned method, a tube of a material satisfying the necessary requirements for forming and as regards mechanical properties, is so deformed by the known method of kneading, also known as roll kneading, or swaging, that the tube, completely or partially, or only the cam shaft ends, is plastically formed, that is to say for instance stretched”

In any event with the amendment of claim 1, only such terms for that method have been used that are found in original claims 1, 2, 8, and 13.

The rejection of claims 1 and 3 – 5 under 35 U.S.C. § 103(a) as being unpatentable (a) over Suzuki U.S. Patent 4,660,269 (“Suzuki” in view of Jordan U.S. Patent 4,382,390 (Jordan) and (b) over Suzuki in view of Dawson et al. IPN WO 88/00643 (“Dawson et al.”) are both respectively traversed. It should be clear from claim 1 as amended that:

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- (a) the kneading/upsetting method step takes place prior to high internal pressure forming,
- (b) regions lying at the ends of the tube are formed outside the region in which the cams are seated, and
- (c) bearing elements and/or drive elements and/or control elements and/or screw threads are formed.

Claim 1 is new and unobvious over the cited art. Neither Jordan nor Dawson et al. disclose such a method step. Upsetting region 7 and 8 according to Suzuki cannot be compared with upsetting according to the invention since upsetting according to Suzuki takes place during the high internal pressure forming step, not in a step prior to high internal pressure forming; see col. 4, lines 40 – 55 of Suzuki. In contrast, see claim 1, to wit: "in a first method step prior to said high internal pressure forming, regions that lie outside the regions in which the cams are seated are so kneaded and/or upset that same are increased in thickness and/or are stretched to form different functional elements ..."

Moreover, Suzuki's forming does not take place in order to form driving or control elements etc. but just to adapt the form of the hollow shaft to the hexagonal shape of the end caps. Accordingly end caps 4 and 5 of Suzuki cannot be compared with the functional elements according to the invention because those end caps 4 and 5 are separate parts which are connected with the shaft. According to the invention, however, applicants' functional elements are formed from the shaft itself. Suzuki does not mention the possibility that the end caps are bearing elements, drive and/or control elements or screw threads.

Accordingly amended claim 1 is not only novel but unobvious since neither Suzuki nor Jordan, nor Dawson et al. suggest a method in which prior to the high internal pressure forming step the ends of the tube are so kneaded and/or upset that the same are increased in thickness and/or stretched in order to form different functional elements.

As previously pointed out, the invention has the advantage that round kneading or upsetting is combined with the IHU method resulting in very low manufacturing complexity and low costs, especially because the number of individual

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parts to be separately manufactured and then to be fitted is extremely low. In contrast, according to Suzuki, separate parts have to be fitted together, especially the shaft and the end caps. The number of sources of error therefore is considerably higher.

Applicants believe the claims are in condition for allowance and respectfully solicit a Notice of Allowance.

The Commissioner is hereby authorized to charge payment of any fees required associated with this communication or credit any overpayment to Deposit Account No. 50-3881. If an extension of time is required, please consider this a petition therefore and charge any additional fees which may be required to Deposit Account No. 50-3881. A duplicate copy of this paper is enclosed.

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Respectfully submitted,



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